

This listing of claims will replace all prior versions and listings of claims in the application.

Listing of Claims:

Claims

1(original). A method for producing a particulate carbon product in a reactor vessel wherein gas flow between a gas inlet port and a gas outlet port suspends a bed of catalyst-containing particulate material in said vessel and said particulate carbon product is discharged from said vessel by falling from the bed.

2(original). A method as claimed in claim 1, wherein the particulate carbon product is prevented from passing through the gas outlet port by means of a gas permeable barrier.

3(currently amended). A method as claimed in claim 1 [[or 2]], wherein the gas flow between the gas inlet port and gas outlet port is such that the bed is a fluidised bed.

4(currently amended). A method as claimed in claim 1 [[or 2]], wherein the gas flow between the gas inlet port and gas outlet port is such that the bed is a fixed bed.

5(currently amended). A method as claimed in any preceding claim 1 wherein catalyst is introduced into the reactor vessel via the gas inlet port.

6(original). A method as claimed in claim 5, wherein the inlet gas comprises a carbonaceous gas and the catalyst is entrained therein.

7(currently amended). A method as claimed in ~~any preceding claim 1~~ wherein the catalyst is a transition metal.

8(currently amended). A method as claimed in ~~any preceding claim 1~~ wherein catalyst is introduced into the reactor vessel beneath the bed.

9(currently amended). A method as claimed in ~~any preceding claim 1~~ wherein the catalyst is introduced into the reactor vessel proximate the bed.

10(currently amended). A method as claimed in ~~any preceding claim 1~~ wherein the temperature in the bed is between 400 and 900 deg. C.

11(currently amended). A method as claimed in ~~any of claims~~ claim1 [[to 9]] wherein the temperature in the bed is between 550 and 900 deg. C.

12(currently amended). A method as claimed in ~~any preceding claim 1~~ wherein the pressure within the bed is between 2 and 25 bar.

13(currently amended). A method as claimed in ~~any of claims~~ claim1 [[to 11]] wherein the pressure within the bed is between 5 and 20 bar.

14(currently amended). A method as claimed in ~~any of claims~~ claim1 [[to 11]] wherein the pressure within the bed is between 5 and 15 bar.

15(currently amended). A method as claimed in ~~any preceding claim 1~~ wherein inlet gas is introduced into the reactor vessel at an elevated temperature.

16(currently amended). A method as claimed in ~~any preceding claim 1~~ wherein inlet gas is introduced into the reactor vessel via a plurality of gas inlet ports.

17(original). A method as claimed in claim 16 wherein inlet gas is introduced into the reactor vessel at different temperatures.

18(currently amended). A method as claimed in ~~any preceding~~ claim 1 wherein carbon particulate product is discharged through a product outlet port disposed beneath the bed.

19(original). A reactor comprising a vessel having a gas inlet port, a gas outlet port and a particulate product outlet port, said gas inlet port being arranged such that in use gas flow therefrom suspends a bed of catalyst containing particulate material in said vessel and particulate product is discharged from the reactor by falling from the bed.

20(currently amended). A reactor arranged to produce carbon nano-fibers ~~nano-fibres~~ comprising a vessel having a gas inlet port, a gas outlet port and a particulate carbon product outlet port, said gas inlet port being arranged such that in use gas flow therefrom suspends a bed of catalyst-containing particulate material in said vessel and particulate carbon product is discharged from said vessel by falling from the bed.

Claims 21-43 (Cancelled).